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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/758,711

01/15/2004

Axel K. Kloth

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EXAMINER

STREGE, JOHN B

ART UNIT

PAPER NUMBER

2624

MAIL DATE

DELIVERY MODE

08/02/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/758,711	Applicant(s) KLOTH, AXEL K.	
	Examiner John B. Strege	Art Unit 2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 January 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>8/30/04</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claim 10 is rejected under 35 U.S.C. 102(b) as being anticipated by Chin et al. A *massively parallel processing system based on a hyper-crossbar network* (cited in the IDS).

Figure 6 on page 465 of Chin discloses a pipeline configuration for image processing with a first layer that does noise reduction (for example filtering is object independent), a second layer that does cluster extraction (object dependent) and a third layer that performs pattern recognition.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-9, and 11-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Juvinal et al. USPN 5,214,713 (cited in the IDS) and further in view

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of Chin et al. *A massively parallel processing system based on a hyper-crossbar network.*

Juvinall discloses a machine vision system comprising a camera 48 for obtaining an image that comprises a plurality of pixels (figure 3) a systolic array processor (66 figure 3) that includes a plurality of one-bit data processors for processing in parallel (corresponding to the first processing layer), a data-dependent processor 72 separate from the systolic array to perform data-dependent processing (corresponding to the second processing layer), and a master computer 74 connected to the camera, systolic array, and data dependent processing (at least col. 2 line 45 - col. 3 line 2). Juvinall does not explicitly disclose a third processing layer to perform object recognition, however as stated there is a master computer which can perform other functions.

Chin discloses that due to the computation demands of image processing it is necessary to develop a system with over one thousand processors to achieve the required performance (first paragraph of the introduction, page 463). A system application that Chin discloses using the massively parallel processing system is for image processing as seen in figure 6 in which a noise reduction layer, a cluster extraction layer, and a pattern recognition layer are disclosed. Chin further discloses that the system can be configured as an array -type multi-processor system to process pixel computation for image processing applications (first paragraph, image processing section, page 465).

Juvinall and Chin are analogous art because they are from the same field of

endeavor of parallel processing systems using systolic arrays processors.

At the time of the invention it would have been obvious to one of ordinary skill in the art to combine Juvinal and Chin to have a third processing layer that carries out pattern recognition. The motivation for doing so would be to develop a system that performs recognition using the power of massive parallel processing. Thus, it would have been obvious to one of ordinary skill in the art to combine Juvinal and Chin to obtain the invention as specified in claim 1.

Claim 11 has the same limitations as claim 1, therefore the same argument discussed above applies equally to the rejection of claim 11.

Regarding claims 2 and 12, Juvinal discloses that the data-dependent processor comprises a plurality of closely coupled Von Neuman processors, thus all of the processors are the same and thus meet the limitation.

Regarding claims 3-5 and 13-15, Chin discloses a massively parallel processing system that can be used to operate as an SIMD, MIMD, MSIMD, etc. The processors form a cluster for the execution of systolic-array-types (as stated at least in the abstract).

Regarding claims 6 and 16, Juvinal discloses that the systolic array processor includes an array of N by n processors that receive pixel data in sequence, thus in time (col. 4 lines 24-44).

Regarding claim 7, Juvinal discloses a camera 48 connected to the system. Regarding claims 8-9 and 17-18, Juvinal discloses a camera that is separate from the systolic arrays thus meeting the limitations. It is well known to realign data in a camera.


Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John B. Strege whose telephone number is (571) 272-7457. The examiner can normally be reached on Monday-Friday between the hours of 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bhavesh Mehta can be reached on (571) 272-7453. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JS


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